

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 May 2001 (25.05.2001)

PCT

(10) International Publication Number
WO 01/35716 A2

(51) International Patent Classification: Not classified

(21) International Application Number: PCT/SG00/00190

(22) International Filing Date:
17 November 2000 (17.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9905854-7 19 November 1999 (19.11.1999) SG

(71) Applicant (for all designated States except US):
APEX-PAL INTERNATIONAL PTE LTD. [SG/SG];
Straits Trading Building, 4 Battery Road, #12-10/12,
Singapore 049910 (SG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FOO, Douglas,

Peow, Yong [SG/SG]; 107 Seagull Walk, Singapore
486705 (SG). FOO, Lilian [SG/SG]; 8 Meragi Road,
Singapore 487885 (SG). MA, Yiming [SG/SG]; Blk 205
Jurong East Street 21, #10-139, Singapore 600205 (SG).

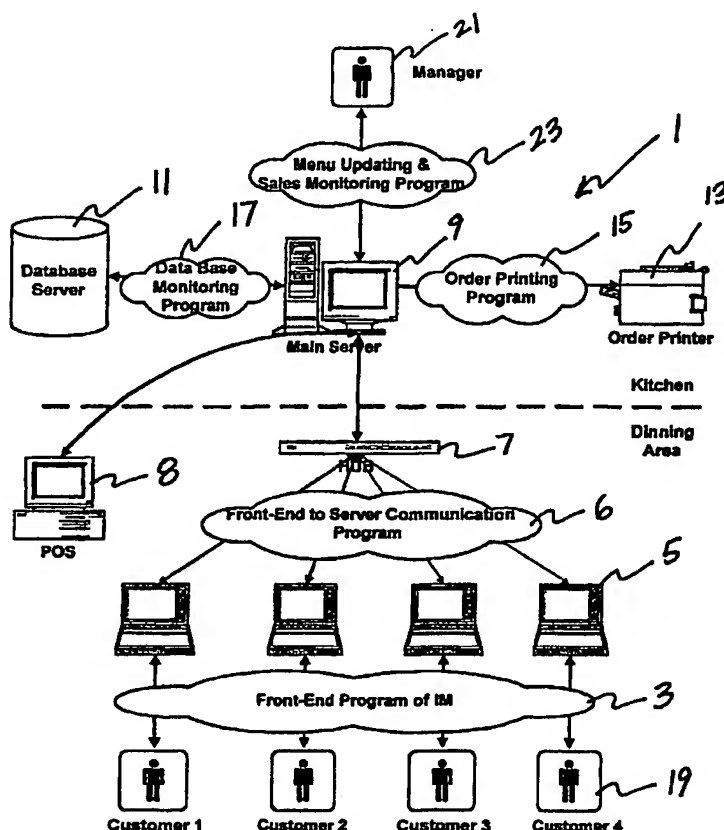
(74) Agent: LAWRENCE Y. D. HO & ASSOCIATES; 30
Bideford Road, #07-01 Thongsia Building, Singapore
229922 (SG).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,
NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, SL, TJ, TM, TR,
TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European

[Continued on next page]

(54) Title: INTERACTIVE MENU SYSTEM FOR RESTAURANTS



(57) Abstract: An interactive menu system allows restaurant customers to order food items without requiring a waiter or waitress. A terminal with screen display is provided at a dining table. Through a graphic user interface, a list of food items is displayed on the screen display. The customer selects the desired food items via a touch screen. When all of the desired food items are selected, the order is confirmed. The order is then sent electronically to a terminal located in the kitchen area where the order is printed out from a printer. The kitchen personnel prepare the food per the printed order.

WO 01/35716 A2



patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *Without international search report and to be republished upon receipt of that report.*

INTERACTIVE MENU SYSTEM FOR RESTAURANTS

FIELD OF THE INVENTION

5 The present invention relates generally to the field of restaurant equipment, and in particular, to an interactive menu which allows restaurant customers to make selection of menu items such as food and beverage without the assistance of a waiter or waitress.

BACKGROUND OF THE INVENTION

 In a typical sit-down restaurant, the process of ordering food and beverage involves reading of the menu, waiting for a waiter or waitress (hereinafter simply "waiter") to take the order, making the order, and then
15 waiting for the food to be served. If additional order needs to be made, the customer must flag down the waiter once again to make the request. With this type of ordering scheme, i.e. using a waiter, the customer must be ready to order when the waiter arrives. If the customer is not ready, he may be rushed into making the order where the best selection may not be
20 made. In other instances, the customer may be ready, but the waiter may not be available perhaps because the waiter may be serving other customers, or the waiter may be difficult to flag down simply because the waiter is unaware that his attention is requested. Hence, it can be seen that the use of waiter for ordering menu items can be a cumbersome
25 process for the customer.

In addition, the use of the waiters to take orders also has disadvantages for a restaurant as well. For one, the restaurant needs to hire additional waiters to accommodate all of the customers. Since wage has to be paid out, hiring waiters can be costly for the restaurant. But if too few waiters are hired, some of the customers may need to wait excessive amount of time, which can cause customer dissatisfaction with the restaurant. In addition to cost for wages, hiring waiters to take orders requires training so that the waiter can answer any questions the customers may have about the restaurant's menu items. Given the relatively high turnover rate for waiters, it is often not economical to provide extensive training where the waiter is fully knowledgeable about every item on the menu.

Although there currently exist electronic restaurant ordering devices to help waiters to take orders for the customers, these devices do not address the problems stated above because they still require the waiters to take the order. While it may be argued that the order entry process is somewhat expedited, it does not completely eliminate the need to have the waiter to take the order from the customers. Therefore, what is necessary is an interactive menu which allows the customer to order menu items without the assistance of a waiter.

OBJECT OF THE INVENTION

It is therefore an object of the present invention to provide an interactive menu system which addresses the shortcomings of the prior art systems described above.

SUMMARY OF THE INVENTION

The present interactive menu system 1 (IMS) includes a plurality of
5 terminals which are placed at each of the designated tables at a
restaurant. The terminals have an electronic display which displays the
menu. A front-end program, through a graphic user interface, allows the
customers to place the order via an appropriate input device. In the
preferred embodiment, the input device is a touch screen, though other
10 input devices such as a mouse or keypad are clearly possible.

The terminals are connected to a hub which is in turn connected to a
server. A generic front-end-to-server communication program provides the
proper interface between the terminals and the main server. Connected to
the server is a database server which contains the data such as the list of
15 the menu items and their prices. A database monitoring program
interfaces the database server with the main server and allows monitoring
capability of the data in the database server. Also connected to the main
server is an order printer for printing out the orders. The order printing
program provides the proper interface between the main server and the
20 order printer. A manager or other authorized personnel may update the
menu and take care of other administrative functions through the menu
updating and sales monitoring program. A PC-based cash register may be
coupled to the main server at the point of sale (POS).

There are several screen which are displayed on the interactive
25 menu. The first screen seen by the customer is the main menu. In the
middle portion of the main screen is the name and logo of the restaurant.

On the top of the main screen is a display of a greeting and simple instruction how to use the interactive menu. On the left side is a list of the food categories. Of course, how the foods are categorized depends on the type of the restaurant, and how the management wishes to package the menu items. At the bottom right portion is a space for advertisements. At the bottom left portion, there are three buttons: Call For Help, Call For Bill, and Choose All Categories , which are all self explanatory.

When a customer selects a food category a list of food items under the category and their respective prices are shown on the left portion. In the middle portion , a picture of all or some of the food items on the list is shown. On the top portion, instruction is given to select the food under the category chosen.

When a customer selects a food item, a picture of the chosen food item is shown in the middle portion of the screen. Next to the picture is a brief description of the food item. At the top portion, an instruction is shown requesting the customer to choose the desired quantity through the quantity buttons. The quantity buttons are shown below the picture.

When the customer has chosen the quantity, in this case one order, the selected food item, quantity ordered, and the total price for that food item are shown in the mini-screen adjacent to the quantity buttons. At this point, the customer can choose to confirm the order by pressing the "Confirm" button, delete the order by pressing the "Delete" button, or continue to order further food items. The instruction is shown in the top portion.

When a customer has pressed the confirm button, the order is sent to the main server and is printed by the printer. The chef then takes the printout and prepares the meal per the order.

5

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates the schematic diagram of the preferred embodiment of the present menu system.

10

FIGS. 2 through 6 illustrate the various graphic user interface screens which are displayed on the terminal display.

DETAILED DESCRIPTION OF THE INVENTION

15

FIG. 1 illustrates the preferred embodiment of the present interactive menu system 1 (IMS). The IMS 1 includes a plurality of terminals 5 which are placed at each of the designated tables at a restaurant. The terminals 5 have an electronic display which displays the menu. A front-end program 3, through a graphic user interface, allows the customers 19 to place the order via an appropriate input device. In the preferred embodiment, the input device is a touch screen, though other input devices such as a mouse or keypad are clearly possible.

20

The terminals 5 are connected to a hub 7 which is in turn connected to a server 9. A generic front-end-to-server communication program 6 provides the proper interface between the terminals 5 and the main server 9. Connected to the server 9 is a database server 11 which contains the

25

data such as the list of the menu items and their prices. A database monitoring program 17 interfaces the database server 11 with the main server 9 and allows monitoring capability of the data in the database server 11. Also connected to the main server 9 is an order printer 13 for printing out the orders. The order printing program 15 provides the proper interface between the main server 9 and the order printer 13. A manager 21 or other authorized personnel may update the menu and take care of other administrative functions through the menu updating and sales monitoring program 23. A PC-based cash register may be coupled to the main server 9 at the point of sale (POS).

It should be understood by those skilled in the art that the above implementation described, while preferred, is not the only way to implement the present invention. For instance, for some embodiments, a separate database server 11 may not be necessary and may be replaced with other memory devices. Also, the printer 13 may not be necessary where only a screen display is sufficient. In addition, although here the main server 9 was located in the kitchen, it may be located elsewhere so long as the kitchen personnel are able to receive the order sent by the customer. Hence, the implementation shown in FIG. 1 illustrative only and should not limit the present invention only to that shown.

FIGS. 2 through 6 illustrate the graphic user interface for the customer to interface with the IMS 1. FIG. 2 illustrates the main screen 30 which the customer initially sees on the terminal 5 display when he or she first sits down at a designated table. Referring to FIG. 2, in the middle portion 37 of the main screen 30 is the name and logo of the restaurant. On the top 33 of the main screen 30 is a display of a greeting and simple

instruction how to use the interactive menu. On the left side 35 is a list of the food categories. Of course, how the foods are categorized depends on the type of the restaurant, and how the management wishes to package the menu items. At the bottom right portion 39 is a space for advertisements. At the bottom left portion, there are three buttons: Call For
5 Help 41, Call For Bill 43, and Choose All Categories 45, which are all self explanatory.

Now referring to FIG. 3, when a customer 19 selects a food category, in this case "Chef Recommendation", a list of food items under the category
10 and their respective prices are shown on the left portion 35. In the middle portion 37, a picture of all or some of the food items on the list is shown. On the top portion 33, instruction is given to select the food under the category chosen.

Now referring to FIG. 4, when a customer 19 selects a food item, in this case Shake Sashimi, in the chosen category, a picture 49 of the
15 chosen food item is shown in the middle portion 47 of the screen. Next to the picture 47 is a brief description 51 of the food item. At the top portion 33, an instruction is shown requesting the customer 19 to choose the desired quantity through the quantity buttons 53. The quantity buttons are
20 shown below the picture 49.

Now referring to FIG. 5, when the customer 19 has chosen the quantity, in this case one order, the selected food item, quantity ordered, and the total price for that food item are shown in the mini-screen 55
adjacent to the quantity buttons 53. At this point, the customer can choose
25 to confirm the order by pressing the "Confirm" button 57, delete the order

by pressing the "Delete" button 59, or continue to order further food items. The instruction is shown in the top portion 33.

Now referring to FIG. 6, the screen now shows a situation where the customer 19 has chosen to select additional food items. As can be seen in
5 the mini-screen 55, all of the selected food items, the quantity ordered, and the total for each of the food items are shown. Again, the customer may continue to order, confirm the order, or delete any of the listed items.

Now referring back to the FIG. 1, when a customer has pressed the confirm button, the order is sent to the main server 9 and is printed by the
10 printer 13. The chef then takes the printout and prepares the meal per the order.

The present interactive menu system offers enormous benefits to the restaurant owner. For one, it reduces the number of waiters and waitresses. It also increases customer satisfaction as he customer does
15 not need to wait for a waiter or waitress to make the order. Moreover, the restaurant owner can place advertisements on the screens. In addition, after the order has been confirmed, the owner may choose to place soothing pictures on the terminal screen or allow video games to be played. The latter option is beneficial to customers with small children who
20 may be disruptive to the parents or other customers if they are not pre-occupied with something of their interest. With such embodiments (where video games are allowed), the terminal should be strategically placed such that the children can easily access both the screen and the controls without unduly hindering the eating enjoyment of the other people at the table or
25 the adjacent tables. One option is to place the terminal screen below the

dining table with a translucent top. Such an arrangement is also conducive in minimizing the space requirement.

The present invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The
5 presently disclosed embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims and all changes which come within the meaning and range of equivalency of the claims are, therefore, to be embraced therein.

CLAIMS

We Claim:

5

1. An interactive menu system for a restaurant having a dining area where a customer can consume food items and a kitchen where food items are prepared, said system comprising:

- 10 a terminal with electronic display located in the dining area,
an input device connected to said terminal;
a processor and memory connected to said terminal;
a user interface displayed on said electronic display, said user interface providing a choice of menu items which can be selected by the customer using said input device; and
15 an output device located in the kitchen, said output device displaying the menu items selected by the customer.

20 2. The interactive menu system as recited in claim 1 wherein said user interface is a graphic user interface.

3. The interactive menu system as recited in claim 1 wherein said input device is a touch screen.

25 4. The interactive menu system as recited in claim 1 wherein said input device is a mouse.

5. The interactive menu system as recited in claim 1 wherein said output device is printer.

6. The interactive menu system as recited in claim 1 wherein said
5 output device is a monitor.

7. The interactive menu system as recited in claim 2 wherein said graphic user interface includes a list of food category, quantity selection buttons, a mini-screen displaying ordered food items, and instructions.

10

8. The interactive menu system as recited in claim 7 wherein when a food item is selected, a picture of said food item appears on said graphic user interface.

15 9. The interactive menu system as recited in claim 7 wherein said graphic user interface includes a delete button for deleting a selected food item before said food item is confirmed.

10. The interactive menu system as recited in claim 7 wherein video
20 games are provided at the terminal.

11. The interactive menu system as recited in claim 1 wherein said terminal is located under a dining table with a translucent top such that said display can be seen through said translucent top.

1/6

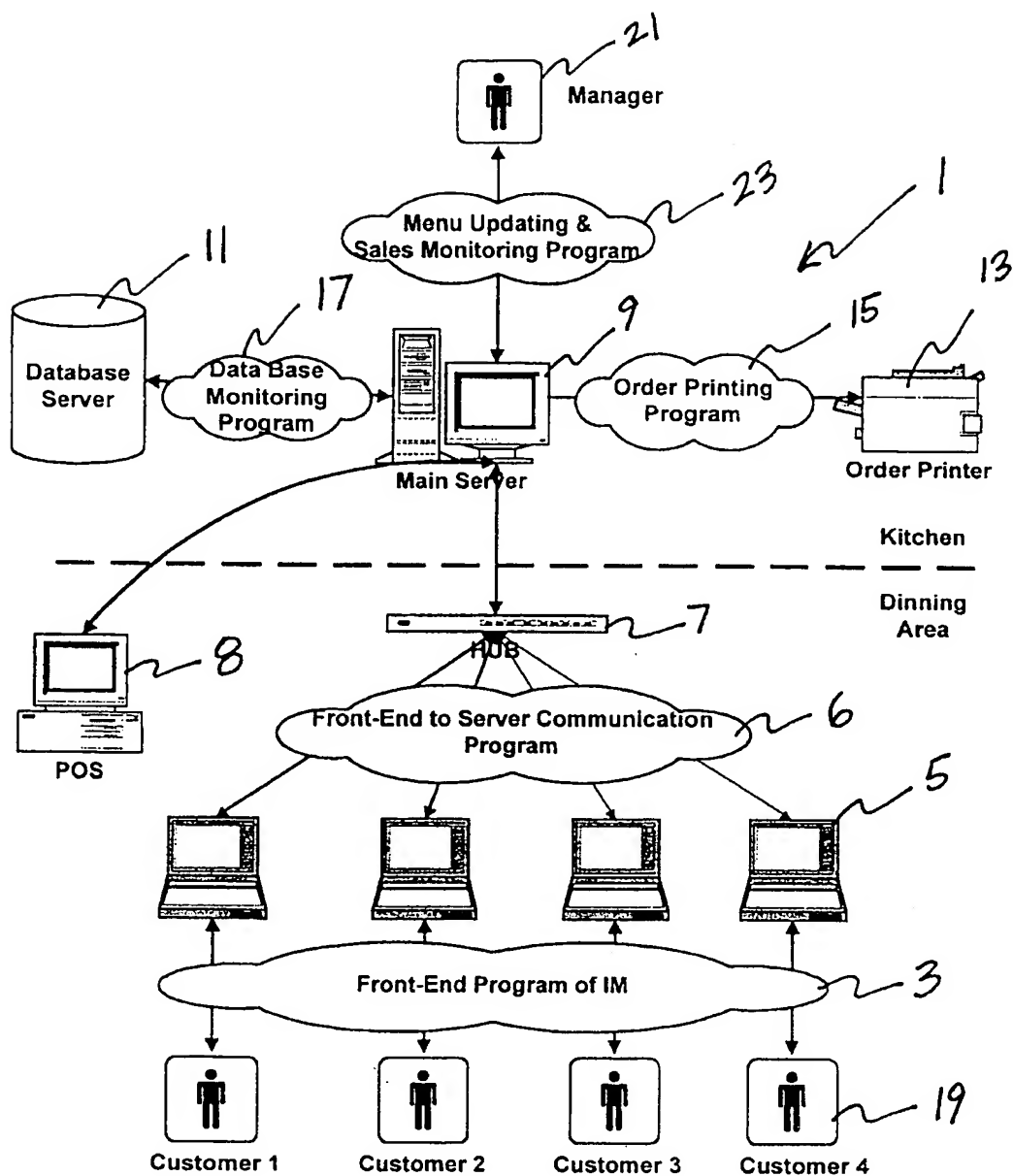


FIG. 1

33 ✓

30

35

41

45

39

43

Welcome to SAKAE SUSHI!

To start the on line ordering system, please select a food category...

A: Chef Recommendation

- B: Sashimi Set
- C: Sushi Set
- D: Bento Set
- E: Party Set
- F: Kiddy Set \$1.10
- G: Don (Rice)
- H: Udon (Noodle)
- I: Premium Sushi/Sashimi \$1.50
- J: Premium Maki \$1.50
- K: Premium Irama \$1.50
- L: All Time Favorites \$1.90
- M: Temaki (Handroll) \$1.90
- N: Sushi \$1.90
- O: Maki (Roll) \$1.90
- P: Gunkan \$1.90
- Q: Beverages
- R: Ice-Cream \$1.90

Delivery Service Now Available! Call for Confirmation!

SAKAE SUSHI 0111 0111 Tel: 410 6201

1 Raffles Place #11-08 0111 Centre Singapore 041116

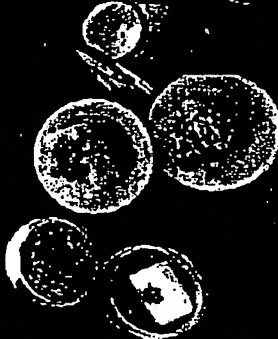
FIG. 2

33

47

37

Please select the desired food under this category.
Click on the category again will close up this category...



A. Chef Recommendation

- Cold Ichi \$1.90
- Cha Soba \$1.90
- Fried Tofu \$1.90
- Chawanmushi \$1.90
- Miso Soup \$1.90
- Fried Maki \$1.90
- Shaka Sashimi \$6.50
- Tempura Maki \$6.50
- Soft Shell Crab Handroll
- Tempura Handroll \$6.50

B. Sashimi Set

- C. Sashimi Set
- D. Bento Set
- E. Party Set
- F. Kiddy Set \$9.90
- G. Don (Rice)
- H. Udon (Noodle)
- I. Premium Sushi Sashimi \$5
- J. Premium Maki \$6.50
- K. Premium Item \$6.50
- L. All Time Favourite \$1.90
- M. Tamaki Handroll \$1.90
- N. Sushi \$1.90
- O. Maki Roll \$1.90
- P. Gunkan \$1.90
- Q. Beverages

Delivery Service Now Available! Call for Enquiries!

CAPA SUSHI OUB CF NINE Tel: 438 6281

1 Halls Place #B1-00 OUB Centre Singapore 048616

FIG. 3

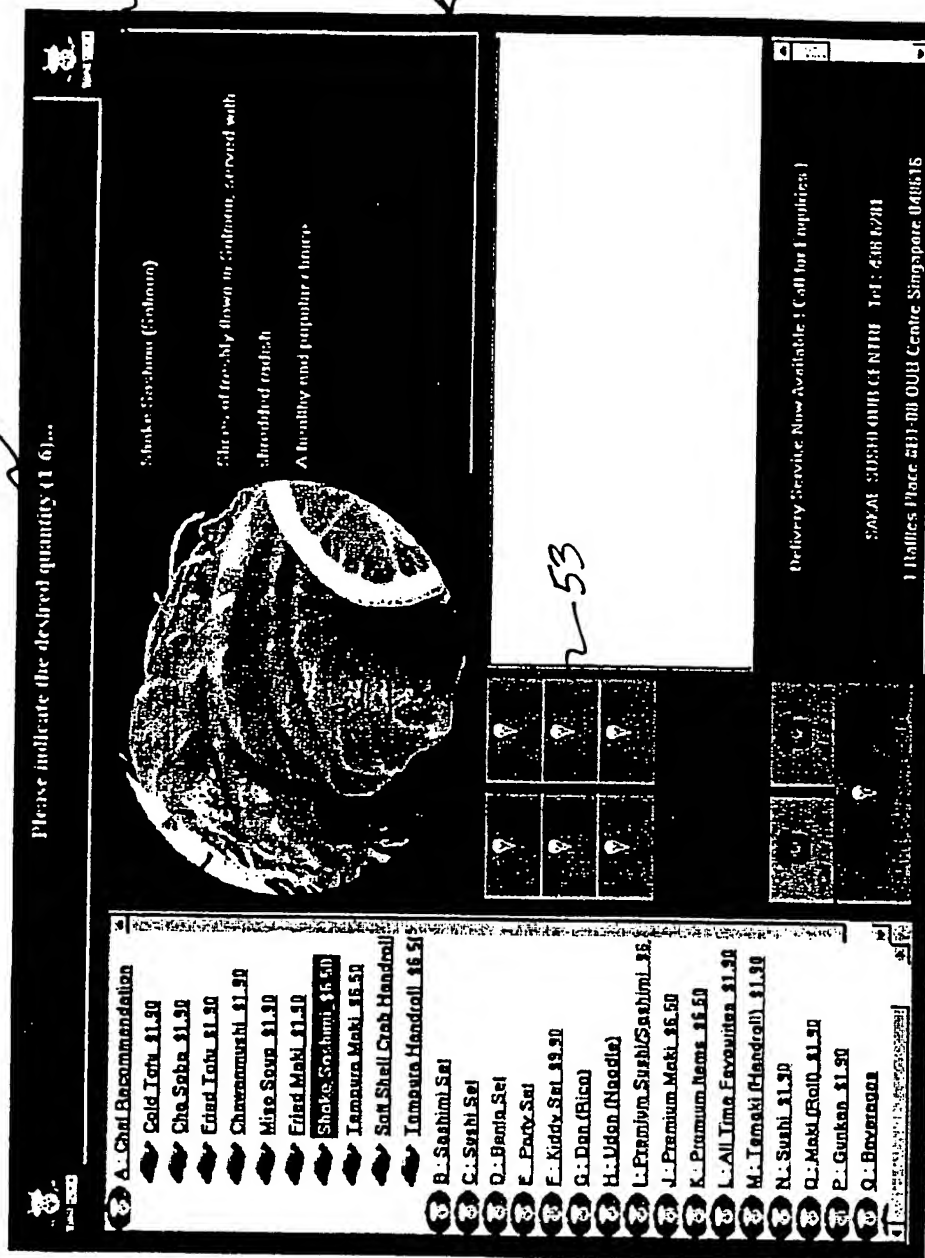


FIG. 4

33

A: Chef Recommendation

- Cold Tofu \$1.90
- Cha Soba \$1.90
- Fried Tofu \$1.90
- Chawanmushi \$1.90
- Miso Soup \$1.90
- Fried Maki \$1.90
- Shaka Sashimi \$6.50
- Tempura Maki \$6.50
- Soft Shell Crab Handroll
- Tempura Handroll \$6.50


B: Sashimi Set

- C: Sashimi Set
- D: Bento Set
- E: Party Set
- F: Kiddy Set \$9.90
- G: Don (Rice)
- H: Udon (Noodle)
- I: Premium Sash/Sashimi \$6
- J: Premium Maki \$6.50
- K: Premium Items \$6.50
- L: All Time Favorites \$1.90
- M: Temaki (Handroll) \$1.90
- N: Sushi \$1.90
- O: Shaka Sushi
- P: Potato Salad
- Q: Ika Sushi

Shaka Sashimi (Salmon)

Placed on freshly flown in Salmon, served with shredded red cabbage

A healthy and popular choice



Food Name	Quantity	Price
Shaka Sashimi	X1	\$6.50

Delivery Service Now Available! Call for Enquiries!

SARAI SUSHI ROLL CENTRE Tel: 418 6300

1185 Pines Place #01-00 OUB Centre Singapore 040616

55

53

59


FIG. 5

Click Delete button to delete selected food...

Shake Sashimi (Salmon)

Slices of freshly flown in Salmon, served with shredded radish.

A healthy and popular choice



Food Name	Quantity	Price
Shake Sashimi \$1.90	X1	\$16.5
Feed To \$1.90	X3	\$15.7
One Soba \$1.90	X4	\$17.6
Cold Toku \$1.90	X6	\$11.4
Onionmush \$1.90	X5	\$19.5

Delivery Service Now Available ! Call for Enquiries !

SARAI SUSHI OUR CHAIR Tel : 438 6281

1 Raffles Place 201-08-0111 Centre Singapore 048616

2-55

A. Chef Recommendation

- Cold Tofu \$1.90
- Cha Soba \$1.90
- Fried Tofu \$1.90
- Chirashimushi \$1.90
- Miso Soup \$1.90
- Fried Maki \$1.90
- Shake Sashimi \$1.90
- Tempura Maki \$1.90
- Soft Shell Crab Handroll
- Tempura Handroll \$1.90

B. Sashimi Set

- C. Sashimi Set
- D. Bento Set
- E. Party Set
- F. Kiddy Set \$9.90
- G. Don (Rice)
- H. Udon (Noodle)
- I. Premium Sashimi/Sashimi \$1.90
- J. Premium Maki \$1.90
- K. Premium Items \$1.90
- L. All Time Favourites \$1.90
- M. Temaki (Handroll) \$1.90
- N. Sushi \$1.90
- O. Maki (Roll) \$1.90
- P. Gunkan \$1.90
- Q. Bovenages

FIG. 6